

WHAT IS CLAIMED IS:

1. A field-sequential color display method comprising:  
time-sequentially displaying of luminous information  
of an input image information with every display color; and  
changing the display color in synchronism with the  
displaying of the luminous information in order to display the  
input image information,

wherein one frame period in which one color image is  
displayed comprises at least four sub-field periods in which  
information of each color is displayed, and a picture signal  
displayed in at least one sub-field period is a non-  
three-primary color picture signal which is generated from at  
least two primary color signals of input picture signals  
including three-primary color signals.

2. A field-sequential color display method as set forth  
in claim 1, wherein the non-three-primary color picture signal  
displayed in the sub-field period is determined on the basis  
of the input image information.

3. A field-sequential color display method as set forth  
in claim 2, wherein the display colors of the primary color  
signals include red, green and blue, and the display color of  
the non-three-primary color picture signal is any one of white,  
cyan, magenta and yellow which are generated from the at least  
two primary color picture signals.

4. A field-sequential color display method as set forth  
in claim 2, wherein the non-three-primary color picture signal  
displayed in the sub-field period is determined on the basis  
of a part of image information of the input image information  
in one frame period.

5. A field-sequential color display method as set forth  
in claim 1, wherein the non-three-primary color picture signal  
displayed in the sub-field period is determined on the basis  
of the input image information every a predetermined frame

interval including a plurality of frame periods.

6. A field-sequential color display method as set forth in claim 1, wherein the non-three-primary color picture signal displayed in the sub-field period is determined with every scene change of the input image information.

7. A field-sequential color display method as set forth in claim 1, wherein the picture signal displayed in each of the sub-field periods is one of modified picture signals which are obtained by separating the input picture signal into the  $n$  non-three-primary color picture signals and three modified three-primary color picture signals when  $n$  is an integer of 1 or more.

8. A field-sequential color display method as set forth in claim 7, wherein the picture signal displayed in the sub-field period comprises the separated and modified three-primary color picture signals, and the  $n$  non-three-primary color picture signals which are generated from the at least two primary color picture signals and which have a higher mean signal intensity than that of at least one of the modified three-primary color picture signals.

9. A field-sequential color display method as set forth in claim 7, wherein the separation of the picture signals is carried out by detecting the minimum value of the three-primary color picture signals, causing the minimum value to be set as the signal value of a first non-three-primary color picture signal of the non-three-primary color picture signals, and causing a smaller signal value of two modified picture signals, which are obtained by subtracting the minimum value from the three-primary color picture signal values and which are not zero, to be set as a second non-three-primary color picture signal of the non-three-primary color picture signals.

10. A field-sequential color display method as set forth

in claim 7, which includes converting process of the input picture signal into a chromaticity coordinates when the input picture signal is separated into the  $n$  non-three-primary colors picture signals and the modified three-primary color picture signals.

11. A field-sequential color display unit comprising:

a non-three-primary color picture signal generator generating a non-three-primary color picture signal by selecting at least two primary color picture signals of three-primary color signals on the basis of an input picture signal including the three-primary color signals;

a monochrome image display sequentially displaying a input picture signal as a monochrome image;

a color display capable of changing a display color every sub-field period at least four of which constitutes one frame period, in which one image is displayed, in synchronism with the monochrome image displaying; and

a display color controller controlling the color display so as to display the non-three-primary color picture signal in at least one of the sub-field periods.

12. A field-sequential color display unit as set forth in claim 11, wherein the display colors of the primary color signals include red, green and blue, and the display color of the non-three-primary color picture signal is any one of white, cyan, magenta and yellow which are generated from the at least two primary color picture signals.

13. A field-sequential color display unit as set forth in claim 11, wherein the non-three-primary color picture signal generator includes a signal separating circuit separating the three-primary color signals from the input picture signal, and generates the non-three-primary color picture signal from the three-primary color signals separated by the signal separating circuit.

14. A field-sequential color display unit as set forth in claim 11, wherein the monochrome image display is a self-emissive type-monochrome image display unit, and the color display is a color filter which is provided in front of the monochrome image display unit and which is capable of time-sequentially changing transmitted color.

15. A field-sequential color display unit as set forth in claim 14, wherein the color filter is a liquid crystal color shutter comprising liquid crystal cells, and a plurality of polarizers.

16. A field-sequential color display unit as set forth in claim 11, wherein the field-sequential color display unit is a projection type-display unit having an optical lens for enlarging or reducing a field-sequentially displayed color image to project the image on a screen.

17. A field-sequential color display unit as set forth in claim 11, wherein the color display is a color wheel.

18. A field-sequential color display unit as set forth in claim 11, wherein the field-sequentially color display unit is a head mounted display observing a field-sequentially displayed color image via an enlarging optical system.

19. A field-sequential color display unit as set forth in claim 11, wherein the monochrome image display is a transmissive type-liquid crystal light valve, and the color display is a backlight provided on the back side of the transmissive type-liquid crystal light valve, the backlight having a plurality of light sources capable of time-sequentially selecting or combining three-primary colors to emit light.